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Upgrade Guide for a participant's ECP/EDX-endpoint in Statnett's network

Version: 1.07

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1   Document History

Version	Date	Changes
1.00	22/03-2019	- First version, in sync with Installation Guide v1.17
1.01	11/02-2020	- In sync with Installation Guide v2.00, supports upgrade to ECP v4.6 and EDX v1.7, from v4.3 and v1.4
1.02	28/05-2020	- Added help to avoid a couple of problems in the EDX-configuration (see chapter 5.4) – specifically about edx.properties and edx.yml - Minor change about definition of <tomcat_path>
1.03	04/06-2020	- Improved upgrade guide on the necessary changes in edx.yml
1.04	09/06-2020	- Adjustments to the JRE-installation (chapter 3.3) - Note about Windows 2019 installation – still not supported (chapter 2)
1.05	11/06-2020	- The uninstaller may not remove all files (chapter 4.2)
1.06	16/04-2021	- In sync with Installation Guide v2.09, supports upgrade to ECP v.4.7.2 and EDX v1.8.2, from v4.6 and v1.7
1.07	06/05-2021	- In sync with Installation Guide v2.10: A crucial property in ecp.properties has been mentioned in this guide as well (see chapter 4)

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2 Introduction

The document "Installation Guide for ECP EDX Statnett Network" covers a lot of introductory material which should be read if you're unfamiliar with ECP/EDX:

- Terminology – many abbreviations are used throughout the document
- The big picture – a diagram which shows the essential components
- Considerations – in case you want to change server topology
- Requirements – about agreement signing and software/hardware requirements.
    - NOTE: Windows 2019 is not supported. Read installation guide for more details.
    - NOTE: There is a new and simplified agreement to be signed
- Firewall & Network – which ports are used and must be opened to the internet
- Appendix – how to change ECP-network, monitoring of ECP, usage of dashboards

You'll find the document in Statnett eRoom in the same location as for this document: https://eroom.statnett.no/eRoom/IKT/ECP/0_e617

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3   Do this first

The application may be installed in either command line or GUI mode. Both modes are described in this chapter. The overall idea with this procedure is to stop the services, backup all necessary data, uninstall and install, then restore data and start the services.

Stop both ECP-endpoint and EDX-toolbox by following the stop procedure in the next chapter.

3.1   Start/stop procedure for ecp-endpoint/edx-toolbox

3.1.1   GUI
➢ Start >services.msc
➢ Find service with name like "ecp-endpoint " or "edx-toolbox"
➢ Start/stop service by buttons on the top left

3.1.2   Command Line
Start/stop service using the command "SC start/stop ecp-endpoint/edx-toolbox" (ex: "SC stop edx-toolbox")

3.2   Variables used in the guide

Several variables are used throughout this installation guide using the <variable_name> format. These variables are used only within this guide and are not to be confused with variables of your OS.

Name	Description
<jre_install_path>	Location of the JRE 8 used by the application
<install_path>	Path pointing to the target installation directory
<tomcat_path>	Path pointing to where Tomcat is installed (usually under <install_path>)
<version>	Version name
<ecp-jar>	Path to the ECP-endpoint installation package, typically ecp-endpoint-<version>.jar
<edx-jar>	Path to the EDX-toolbox installation package, typically edx-toolbox-<version>.jar

3.3   JRE installation

You need Java Runtime Environment (JRE) 8. Check that you have the correct version by typing "java –version" in a console the output should indicate version "1.8.0_xxx". You **must upgrade to latest version**, as of April 2021, update 282. The link below offers JDK (with MSI), but it's the JRE (currently no MSI available) you should download:

https://developers.redhat.com/products/openjdk/download

All Downloads

January 2021

jdk-8u282-x64 ZIP	OpenJDK 8 Windows 64-bit	📅 Release date January 28, 2021	Download (169.01 MB)
jdk-8u282-x64 MSI	OpenJDK 8 Windows 64-bit	📅 Release date January 28, 2021	Download (209.98 MB)
jre-8u282-x64 ZIP	JRE 8 Windows 64-bit	📅 Release date January 28, 2021	Download (44.09 MB)

Unzip the package you've downloaded and place it in your filesystem and update the PATH and JRE_HOME environment variable. Example of commands that can do this:

>set PATH= C:\Program Files\Java\jre1.8.0_282\bin;%PATH%

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```
>set JRE_HOME=C:\Program Files\Java\jre1.8.0_282
```

In a new cmd-console, test that "java -version" returns the correct version.

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4 Upgrade of ECP-endpoint on Windows

4.1 Backup

Back up the following files and folders to a folder outside of <install_path>.

- <install_path>\ecp.properties
- <install_path>\ecp-users.properties (did not exist in v4.3)
- <install_path>\jmxremote.properties (did not exist in v4.3)
- <tomcat_path>\conf\server.xml (if you use non-default settings)
- <tomcat_path>\conf\tomcat-users.xml (if you have defined logins)
- <install_path>\content
- <install_path>\db (unless you run external db)
- <install_path>\internalBroker (unless you run external broker)

4.2 Uninstall

Navigate to <install_path>\Uninstaller and run uninstaller.jar. After that the whole application folder is deleted. In case of uninstalling via command line: Run the command line as an administrator. Navigate to <install_path>\Uninstaller and execute the following command:

> java -jar uninstaller.jar -c

Uninstaller will remove all application components and deregister the service if present.
NB! Please check that everything is removed (services + files). Some have reported that it did not remove all the old files – perhaps due to permission issues. If old files linger it will create problems later on.

4.3 Install

NB! Make sure you've installed the latest JRE before you continue (see previous chapter).

To run installation in console only (not capable of GUI), skip to step 2 and add "-console" in step 4.

Step	Comment	Action/Command
1	If Java was registered to execute jar files, an installer window should open and you can skip to step 5. If an installer does not start follow steps 2 – 4.	Double-click the <ecp-jar> file (you must be administrator)
2	Open command line with administrator rights	Start > type "cmd" > right click > run as administrator
3	Change directory to location of ecp-endpoint.jar	Example: cd c:\ecp-installer
4	Run the ecp-endpoint.jar file. If you want to run in console only, run the second command and follow the installation wizard (approx. like step 5). You may get warnings about missing language resource; ignore them.	java -jar <ecp-jar> java -jar <ecp-jar> -console

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5	ECP-endpoint installer window should open. **Warning**: The GUI installer doesn't notify if unlimited strength JCE is not installed.	• Select <install_path> • Next • ECP-endpoint should be installed as a Windows service • Next > Next • If desired, an automatic installation script can be generated. It can be used in the future to install the application using the same options. • Done

4.4   ECP-endpoint configuration

When ECP-endpoint is registered as a Windows service, it is possible to change its system properties using the Tomcat application for management of Windows services (the method shown is cumbersome but apparently robust):

➢ cd <install_path>\tomcat\bin
➢ tomcat9w.exe //ES//ecp-endpoint (see footnote for syntax explanation [1])

When the property dialogue opens, change tab to Java. Consider changing the following settings:
• Make sure "Use default" is on/true – important **if you have upgraded Java/JRE**
• 2048 MB is more than enough memory, even lower settings should be fine in most cases

4.5   Restore and add new configuration

Restore all files from chapter 4.1 back to the same folders.

Add the following properties (new since v4.6.1) in ecp.properties – since compression job is not working as it should in v4.7.2
• ecp.db.compressionJobEnabled=false

See "Installation Guide for ECP EDX Statnett Network v2.10.pdf" (or newer) chapter 7.2.2: Make sure your ecp.properties are in line with the recommendations in that chapter. If you had user/pass defined in tomcat-users.xml, then this configuration has moved to ecp-users.properties. Read about this in chapter 7.2.3 (in the installation document).

4.6   Installation verification

Start the ECP-endpoint (see chapter 3.1)

The application should be installed in the <install_path> folder. This installation folder should contain configuration files, Tomcat folder, and uninstaller. After the application is successfully started, it creates additional folders for data and log files. Default names and locations of these folders are <install_path>\data and <install_path>\logs.

Check the status of the service, if installed: **>SC query ecp-endpoint** or in the Windows Services tool

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[1] https://tomcat.apache.org/tomcat-7.0-doc/windows-service-howto.html

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Check the application log files for more information about its status. The default location is <install_path>\logs. Check catalina.log/out and ecp.log, if no ERROR messages are found things should be fine.

To be sure, go to the Web interface on the Settings page and find "Check connectivity" button for the Component Directory. Press it – it should show "Connected".

Component Directory

Primary   S

Code	ecp-directory
URL and Network	https://172.32.3.2:8443/ECP_MODULE DefaultNetwork

Push Configuration   Check Connectivity

Also, remember to turn on Automatic Renewal (same page) if it's not set:

Certificates

Automatic Renewal

Enabled | Disabled | ⟳ Renew Manually | ⬆ Import Certificate

Local | Network

Certificate Type	Active Since	Valid To	Preferred	
Registration	13.06.2019 16:26	12.06.2020 12:03	Yes	>
Global CA	13.06.2019 16:26	17.02.2026 09:49	Yes	>
Integrated CA	13.06.2019 16:26	13.06.2024 10:05	Yes	>
Authentication	21.01.2020 10:27	20.01.2021 10:26	Yes	>
Encryption	21.01.2020 10:27	20.01.2021 10:26	Yes	>
Signing	21.01.2020 10:27	20.01.2021 10:26	Yes	>

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5 Installation of EDX-toolbox on Windows

5.1 Backup

Back up the following files and folders to a folder outside of <install_path>.

- <install_path>\edx*.properties (there can be several)
- <install_path>\edx.yml
- <install_path>\data
- <install_path>\jmxremote.properties (did not exist in v1.4)
- <tomcat_path>\conf\server.xml (if you use non-default settings)
- <tomcat_path>\conf\tomcat-users.xml (if you have defined logins)

In case you have changed ports configuration for EDX (which is the typical setup for ECP/EDX), you must

- Open Windows cmd as administrator and type in: cd <install_path>\tomcat\bin
- tomcat9w.exe //ES//edx-toolbox
- Go to the Java tab and copy out all the values in all fields – back then up to a safe place

5.2 Uninstall

Open command line with the administrator rights:

- Start > type "cmd" > right click > run as administrator

Navigate to <install_path>\Uninstaller e.g.:

- cd "c:\EDX Toolbox\Uninstaller"

and run uninstaller.jar:

- java -jar uninstaller.jar

After that the whole application folder is deleted.

5.3 EDX-toolbox Installation

Step	Comment	Action/Command
1	If Java was registered to execute jar files, an installer window should open and you can skip to step 5. If an installer does not start follow steps 2 – 4.	Double-click the <edx-jar> file
2	Open command line with administrator rights	Start > type "cmd" > right click > run as administrator
3	Change directory to location of ecp-endpoint.jar	Example: cd c:\edx-installer
4	Run the ecp-endpoint.jar file. If you want to run in console only, run the second command and follow the installation wizard (approx. like step 5).	java -jar <edx-jar> java -jar <edx-jar> -console
5	EDX-toolbox installer window should open	- Select target installation path - Next - Choose whether the EDX-toolbox should be installed as a Windows service - Next > Next

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		• If desired, an automatic installation script can be generated. It can be used in the future to install the application using the same options. • Done

5.4 Restore and new configuration

Restore all files from chapter 5.1 back to the same folders.

5.4.1 edx.properties

See "Installation Guide for ECP EDX Statnett Network v2.09.pdf" (or newer) chapter 8.2.2: Make sure your edx.properties are in line with the recommendations in that chapter. One particular caveat is that if your BA use WebService to connect to EDX and your setting **spring.profiles.active** is **edx-nonha**, then it will now require WS-Security from the BA, which it didn't in version 1.4.1. See chapter 8.2.2 for how to adjust this.

5.4.2 tomcat-users-xml -> edx-users.xml

If you had user/pass defined in tomcat-users.xml, then this configuration has moved to edx-users.properties. Read about this in chapter 8.2.4 (in the installation guide)

5.4.3 Tomcat service configuration

Restore the Tomcat Service configuration this way: Copy the new configuration to notepad (or similar) to carefully review which configuration should be added back from backup. **Make sure no new configuration will be deleted**, just the correct port settings added.

5.4.4 edx.yml

If you have specified a route in edx.yml which uses the keyword "service", then you must change this into a new syntax. See chapter 8.5 of the installation guide for a full guide on the all possibilities. The short summary is that if you previously had this type of config (marked in red what has changed):

```
- {code: route-FASIT, service: FASIT, start: toolbox-gateway, end: fasit-in-queue, fail: fasit-in-queue, steps: [] }
```

You must change to this:

```
- {code: route-FASIT, service: {serviceCode: FASIT, domainCode: DEFAULT_DOMAIN, serviceCatalogueCode: SC-CODE }, start: toolbox-gateway, end: fasit-in-queue, fail: fasit-in-queue, steps: [] }
```

The SC-CODE (=ServiceCatalogue Code) for the test/production-environment is specified in the Statnett Installation Guide chapter 8.2.2.

You must only have one yml file in the EDX-config directory, because EDX will read all yml files (typically the old one!).

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5.5   Start and request Service Configuration

Start the EDX-toolbox (see chapter 3.1). Go to the dashboard, Settings tab of you EDX Toolbox and click on "Request Network Configuration from Service Catalogue" button. Confirm that the version field is set on the same page and that the timestamp is correct.

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6 Upgrade of ECP/EDX on Linux (Red Hat 7 or CentOs 7)

The installation is not covered here, but a few tips are in order.

- The installation is made for the Red Hat 7 and CentOS 7 distribution. RPM-packages available on the eRoom (see chapter 2)
- Chapter 3 is the same for any OS, but next two chapters differ
- You can browse "Advanced Documentation" on the eRoom (https://eroom.statnett.no/eRoom/IKT/ECP/0_eaf4) to find installation guides which cover Linux installation.
- Contact ecp@statnett.no if you have more questions. If many requires Linux installation, we can expand this installation guide.